

Land Utilization in a Southeastern Ohio County

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OHIO
AGRICULTURAL EXPERIMENT STATION
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LAND UTILIZATION IN A SOUTHEASTERN OHIO COUNTY

J. H. SITTERLEY, H. R. MOORE, AND J. I. FALCONER¹

Marginal land areas have attracted much attention in recent years. The prevailing relatively low prices of farm products for the past 10 years have led to a reduced income to those engaged in agriculture, especially to those farmers located on the less productive lands. Many regions which were settled in the days of hand tools have found it increasingly difficult to compete in these later years of large units of machinery and the gas engine. Areas which could provide a satisfactory living in the era of few wants have found it difficult to provide a satisfactory living in the days of good roads, automobiles, radios, telephones, etc., all items which cost money. Marginal lands have, therefore, come in for their share of attention in the discussion of solutions of the agricultural problem.

In the poorer areas of the Lake States, a rapidly mounting rate of tax delinquency has focused attention upon the problem of marginal lands. In the Eastern States, tax delinquency has not assumed the proportions that it has in the Lake states; rather, the cause of concern has been farm abandonment, delapidated buildings, a low tax base, and low standards of living in the marginal areas. Another factor which has brought the poor, marginal areas into the limelight has been the growth of the practice of state aid. With state aid going into the support of education, roads, health, and other facilities for living in the poorer sections, the question has arisen as to how far it is socially justifiable to attempt to maintain these institutions in the marginal area, or whether it would be more reasonable to hasten rather than to retard the movement of population out of these poorer areas.

During the summer of 1930, the Ohio Agricultural Experiment Station carried on a study of land utilization in Vinton County, Ohio, in order to throw some light on these problems in southeastern Ohio and to serve as a basis for further studies in marginal and submarginal areas.

¹Acknowledgment is herewith made of the hearty cooperation of the local officials who made available the county records for the purposes of this report. The assistance of G. Knox, County Auditor, was particularly valuable.

The southeastern part of the State comprises a relatively large percentage of the marginal and submarginal agricultural areas of Ohio. In 14 adjacent counties of this area the number of farms has decreased from 38,924 in 1900 to 28,703 in 1930, or a decrease of 26 per cent in 30 years. Since 1880, the acreage of wheat has decreased 65 per cent and the number of sheep 61 per cent. Vinton County was selected for the study as being typical of this area for the following reasons:



Map 1.—Location of Vinton County

1. It is a distinctly rural county. With a total population of 10,285 people in the county in 1930, there were only four incorporated villages—McArthur, the county seat, with a population of 1,188; Hamden, with a population of 882; Zaleski, with a population of 367; and Wilkesville, with a population of 221. Clay products, coal mining, and gas and oil, along with agricultural trading, supply the economic base of these villages.

2. There are 263,680 acres of land in the county. In 1880 the area of land in farms was 230,000 acres; by 1910 this had declined to 216,000 acres, and by 1930 to 152,000 acres, or 58.8 per cent of the total land area. In 1930 the area of improved land in the county was less than one-half that in 1900, and the number of farms in the county has decreased from 2,089 in 1900 to 1,823 in 1910 and to 1,075 in 1930.

3. The population of the county has decreased from 17,223 in 1880 to 10,285 in 1930 (Table 1).

4. In a study made of 85 farms in 1926, in what was by no means the poorest part of the county, it was found that the average sales of farm products per farm were around \$600, and that from two-thirds of the farms the total sales per farm were less than \$500. In 1929 it was estimated that the sales of farm products for all land in the county averaged \$2.63 per acre, or a total of \$681,000.

5. The county has the lowest average tax valuation of rural real estate of all counties in the State. In 1928, it was \$15.73 per acre for land and buildings, and even this figure seems high when compared with recent sales of land in the county.

6. In Vinton and 13 adjoining counties there are approximately 1,000,000 acres of land which lie idle and are not within the bounds of farms, and, in addition, at least one-half that number of acres of idle land lie within the boundaries of farms.

Vinton County is located in the residual soil area of southeastern Ohio. The region is part of the Appalachian Plateau. The upland soils are, for the most part, residual in origin; that is, they have been formed by the weathering in place of the bed rock which is predominantly non-calcareous sandstones and shales. The topography of the region is rolling and hilly. Streams and their valleys penetrate to all parts of the region, so that narrow ridges, steep valley sides, and level valley floors of variable width are characteristic. The eastern part of the county is drained by the upper waters of Raccoon Creek which flows southward into the Ohio; the western part, by Salt Creek and its branches, a tributary of the Scioto.

TABLE 1.—Comparison of Vinton County Agriculture in 1880, 1925, and 1930

	1880	1925	1930*
Acres in county	263,680	263,680	259,305
Acres in farms	230,410	190,912	152,502
Acres of improved land	151,488	.....	67,383
Number of farms	1,840	1,589	1,075†
Acres of crop land	67,027	38,233	35,364
Acres of corn	16,852	11,095	.....
Acres of wheat	10,651	2,579	.....
Acres of oats	3,220	2,309	.....
Acres in hay	13,723	17,171	.....
Acres in pasture .....	.....	103,617	69,686
Number of milk cows	3,757	3,815	.....
Number of other cattle	7,190	4,653	.....
Number of sheep	36,858	8,668	.....
Number of hogs	9,994	3,112	.....

*1930 survey.

†1930 census.

The county was first settled about 1800. In 1850 the population was 9,353 and in 1880, 17,223; since about 1880 the population has been declining. At one time there were four charcoal iron

furnaces in the county, at Eagle, Hope, Vinton, and Hamden, but these have long since disappeared. Coal is mined in the county, but not so much as formerly. Zaleski, at one time a boom mining town, was laid out in 1836 and between 1870 and 1880 it was reported to have had a population of 2,000 people; in 1930, its population was 367. Gas and some oil are found in parts of the county. Considerable areas are under lease for gas. Aside from some coal mining, two brick plants, and gas wells, there is little industry in the county. Two railroads traverse the county, the Hocking Valley running north and south and the Baltimore and Ohio running southwest through the eastern and southern part of the county. At one time the Baltimore and Ohio maintained railroad shops at Zaleski but these have long since been discontinued.

The agriculture of the county was probably at its height about 1880. Table 1 will give some comparisons of Vinton County agriculture of 1880 and 1925, as reported by the United States Census, and in 1930, as found by the survey. Probably, the greatest deterioration has occurred in the quality of the pasture, on which comparable data are not available.

TABLE 2.—Population of Vinton County, 1850-1930

Townships and incorporated villages	1930	1920	1910	1900	1890	1880	1870	1860	1850
Brown	441	505	560	746	923	1,241	1,297	874	648
Clinton—outside inc. village	844	892	988	1,010	1,085	1,088	1,360	1,544	886
Hamden Village	882	837	1,019	838	622	520	364	.....	.....
Eagle	452	582	750	1,073	988	1,044	681	592	476
Elk—outside inc. village	705	755	811	868	1,136	1,100	1,202	1,412	1,221
McArthur Village	1,188	1,307	1,107	941	888	900	861	822	424
Harrison	633	917	980	1,187	1,250	1,172	782	780	580
Jackson	492	734	845	1,156	1,145	1,288	1,294	1,228	835
Knox	387	513	637	953	1,059	947	559	475	439
Madison—outside inc. village	350	369	497	654	778	1,042	933	782	.....
Zaleski Village	367	395	476	577	862	1,175	690	.....	.....
Richland	819	943	1,129	1,451	1,439	1,668	1,814	1,717	1,193
Swan	455	613	712	979	1,001	1,095	1,062	1,281	1,154
Vinton	1,016	1,218	1,195	1,336	1,202	1,131	656	807	460
Wilkesville—outside inc. village	1,033	1,271	1,187	1,338	1,405	1,503	1,472	1,316	1,037
Wilkesville Village	221	224	203	223	262	309	.....	.....	.....
Total	10,285	12,075	13,096	15,330	16,045	17,223	15,027	13,630	9,353

In the study of 85 Vinton County farms in 1926, it was found that the total cash receipts per farm averaged \$872, of which amount \$251 were income from outside labor, coal, oil, and other miscellaneous sources. Cash farm expenses averaged \$475 per farm, not including interest on an average investment of \$3,250. Three of the farms reported gross receipts of over \$3,000; three

farms of from \$2,000 to \$3,000; 14 farms of from \$1,000 to \$2,000; 32 farms of from \$500 to \$1,000; and 33 farms of less than \$500. The following farm, which is better than the average at the present time, will serve to represent the type of farming and volume of business of a Vinton County farm:

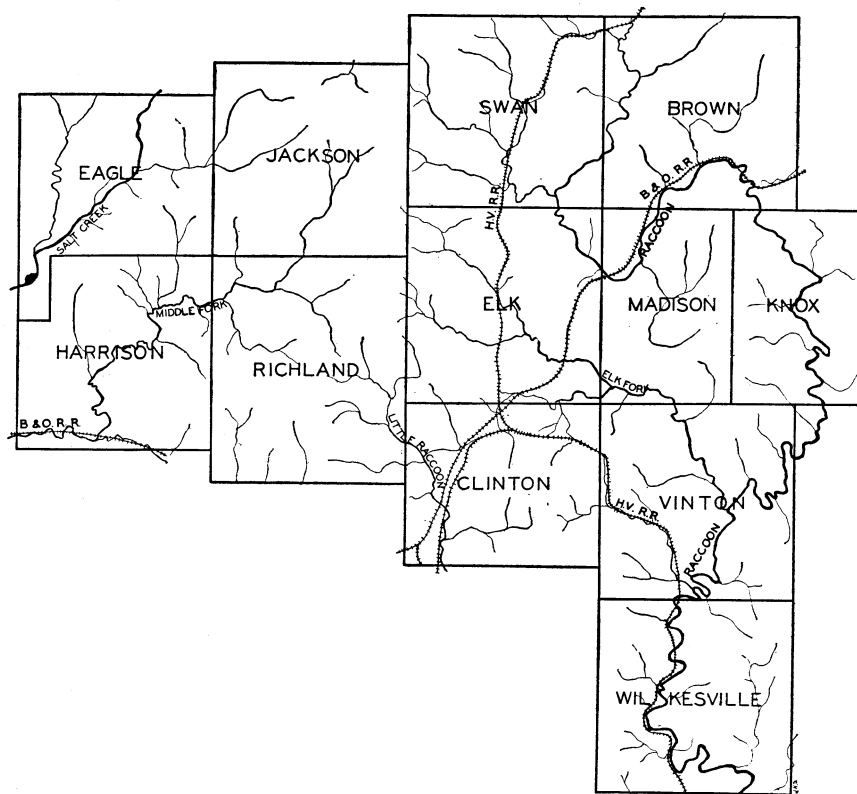
	ACRES		SALES AND INCOME
Corn	10	Cattle	\$126
Wheat	5	Dairy	97
Hay	15	Chickens	133
Miscellaneous crops	2	Sheep	86
Pasture	66	Hogs	43
Woods not pastured	8	Crops	103
Waste	10	Coal and oil	25
		Labor	225
Total	116		
		Total	\$838

The field work for this study was carried on in the summer of 1930. Equipped with a map showing the location, acreage, and name of owner of each tract of land in the county, the workers walked over each tract and noted the information relative to the use of land, topography, surface cover, roads, houses, etc. Information relating to land values, tax delinquency, and other county finance was secured from county and state records.

THE TOPOGRAPHY OF VINTON COUNTY

The county can best be described as uniformly hilly. The more rugged lands are found in the western townships of Eagle, Harrison, Jackson, and Richland, of which Eagle is the most rugged. In the eastern part of the county, Brown, Knox, Madison, and Vinton Townships contain the rougher areas. The central part of the county, Swan, Elk, and Clinton Townships, along with Wilkesville in the southeastern part, comprises the more gently rolling areas. The level areas in the county are largely confined to the valley plains and comprise about 12 per cent of the total area fairly evenly distributed over the county. There is but little correlation between the steepness of the hills and the amount of level land. Eagle and Harrison Townships both contain large areas of very hilly land and, also, a fairly good acreage of level land.

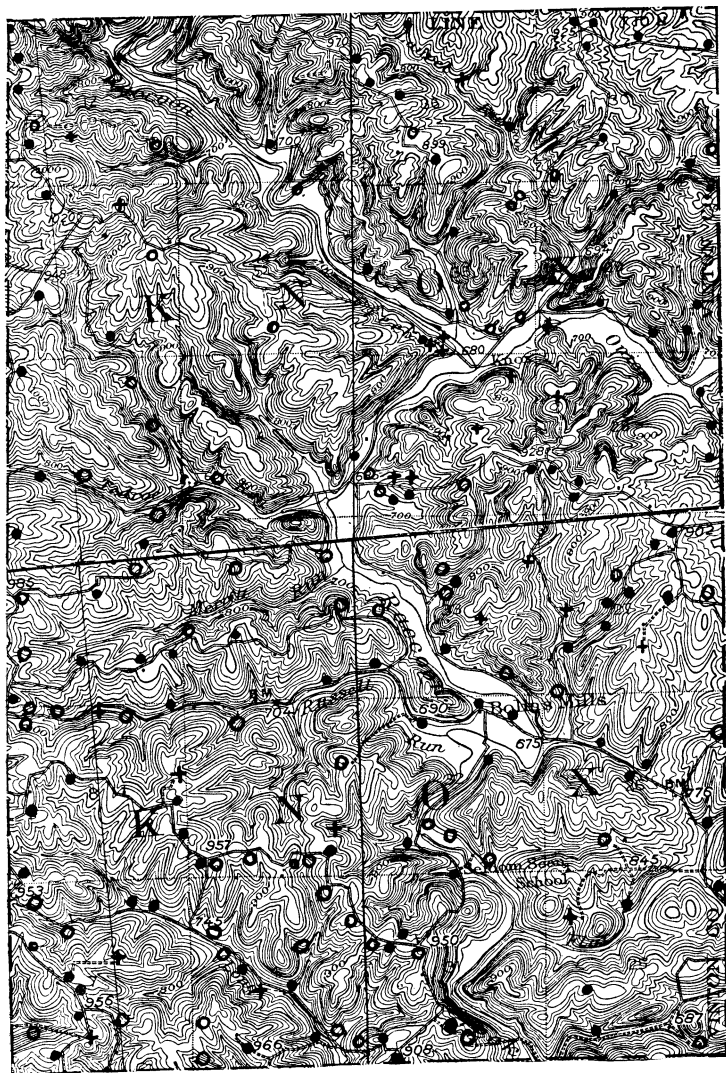
The valleys are generally very narrow. The widest valleys are those of Salt Creek in Eagle Township and Middle Fork in Harrison Township. Raccoon Creek which forms the most important drainage system in the county is very winding and, on the average, very narrow. In Map 2 the main drainage system is outlined.



Map 2.—Drainage system, railroads, and townships in Vinton County

As to topography, the lands were classed in three groups: level, hilly, and very hilly (Table 3). The term "level" as used in this classification needs no explanation. The distinction between "hilly" and "very hilly" was drawn on the basis of the adaptability to agricultural use. Land placed in the class of very hilly was that which was considered too steep to be cultivated by cultural methods now followed in the county. The land that was not deemed level or very hilly was classed as hilly and includes a wide variation in degree of slope, ranging from the more gentle slopes to those that could only be cultivated with difficulty. Approximately 80 per cent of the area in the county was classed as hilly. Much of the land that was at one time cultivated can not now be profitably used, as the more modern methods of culture which would return a profit can not be followed. The slopes are often too steep for modern machinery, and if cultivation were possible the element of erosion

would be a limiting factor. The topographic maps of Knox and Jackson Townships (Maps 3 and 4) give a fairly typical picture of the ruggedness of large areas of the county.



● HOUSE OCCUPIED ○ HOUSE UNOCCUPIED
+ HOUSE GONE

SCALE ————— EQUALS ONE MILE
CONTOUR INTERVAL 20 FEET

Map 3.—Topographic map of Knox Township



● HOUSE OCCUPIED, ○ HOUSE UNOCCUPIED, + HOUSE GONE
 SCALE ————— EQUALS ONE MILE
 CONTOUR INTERVAL 20 FEET

Map 4.—Topographic map of Jackson Township

The hilly nature of Vinton County and the rapidity with which rainfall drains off would indicate that soil erosion was taking place at a rapid rate. Two general types of erosion were encountered; namely, gully and sheet. The amount of gully erosion was small, totalling slightly less than 600 acres actually gullied. Sheet erosion, or a rather gradual washing away of the surface soil, was occurring generally over the county, especially on the steeper slopes where there was cultivated land and land with little or no plant growth. Sheet erosion, although occurring generally, has not as yet progressed to the point where it can not be checked.

TABLE 3.—The Topography of Vinton County

Township	Total area	Level*	Hilly	Very hilly
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Eagle.....	20,877	3,243	8,497	9,137
Harrison.....	21,927	4,458	14,410	3,059
Jackson.....	23,269	633	20,710	1,926
Richland.....	26,886	1,866	23,468	1,552
Swan.....	23,418	3,712	19,562	144
Elk.....	23,271	3,296	19,922	53
Clinton.....	19,217	3,368	15,849	.....
Brown.....	23,263	1,607	20,449	1,207
Knox.....	15,519	1,011	12,795	1,713
Madison.....	15,309	1,135	11,025	3,149
Vinton.....	22,984	2,086	18,334	2,564
Wilkesville.....	23,365	3,086	19,605	674
Total.....	259,305	29,501	204,626	25,178

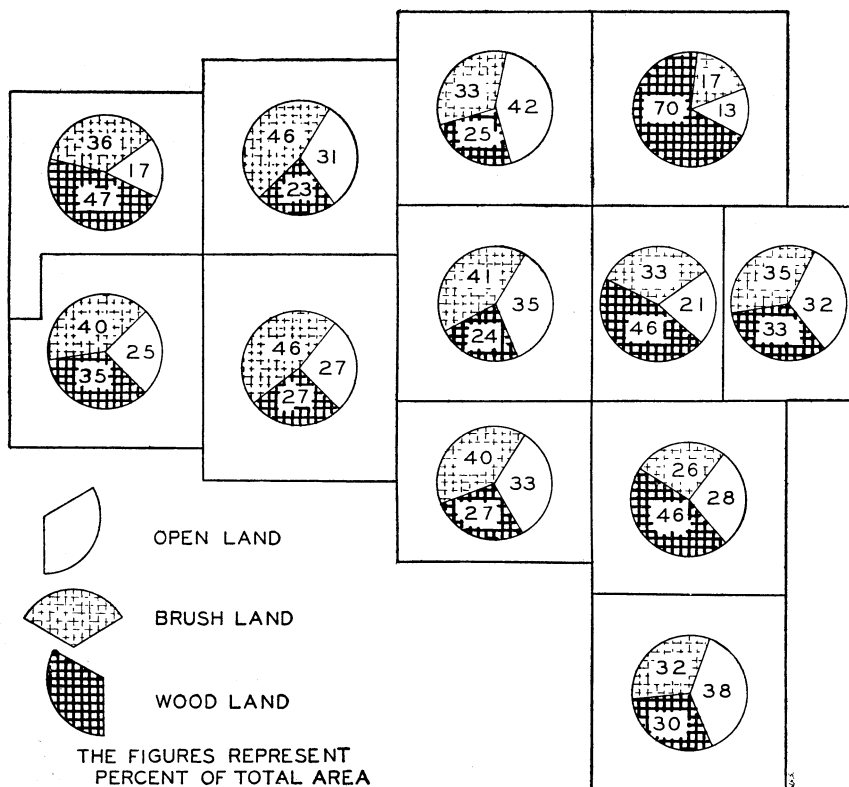
*Area in villages included.

THE SURFACE COVER

The surface cover classification was broad and general. In this respect, the surface area was divided into three groups or classes—open land, brush land, and wood land. Open land might also have been called cleared land, in the sense that it was free from trees, brush, and established brier patches. All areas in cultivated crops and hay were classified as open land. The term brush land was applied to areas with brushy and briery growth in such quantities as to require some clearing before the land could be farmed. Areas that contained sufficient stand of right variety to develop into timber were classed as wood land. The line between wood land and brush land was drawn on the basis of the nature of the plant growth and stand. The size of the growth was used as a deciding factor only when deciding whether the brush growth or the timber growth would choke out the other. No record was made as to the variety of trees, brush, or plant life. Table 4 gives the surface cover as found by townships.

Less than one-third, or 29 per cent, of the area in Vinton County was classed as open land at the time of the study. Brown Township had the smallest amount of open land in the county with but 13 per cent; it was closely followed by Eagle with 17 per cent and by Madison with 21 per cent. Incidentally, the townships with the smallest amount of open land were also among the group of the most rugged townships in the county. Swan, Wilkesville, Elk, and Clinton Townships, in the order named, had the highest percentage of open land. Forty-two per cent of the land in Swan Township was classed as open, which on a township basis was the highest in

the county. However, sections in the eastern half of Wilkesville and western halves of Elk and Clinton Townships had as high a percentage of open land or a higher.

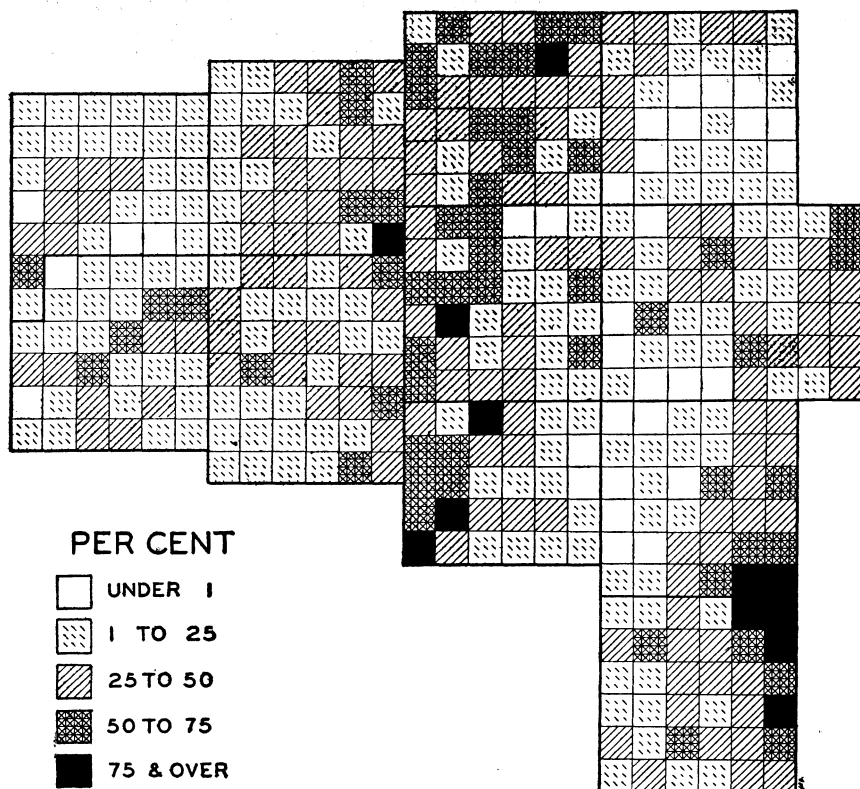


Map 5.—Surface cover by townships

TABLE 4.—The Surface Cover of Vinton County, 1930

Township	Total area	Open land*	Brush land	Wood land
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Eagle.....	20,877	3,554	7,436	9,887
Harrison.....	21,927	5,430	8,762	7,735
Jackson.....	23,269	7,297	10,734	5,238
Richland.....	26,886	7,273	12,461	7,152
Swan.....	23,418	9,907	7,715	5,796
Elk.....	23,271	8,261	9,541	5,469
Clinton.....	19,217	6,415	7,657	5,145
Brown.....	23,263	3,042	3,964	16,257
Knox.....	15,519	4,902	5,449	5,168
Madison.....	15,309	3,291	5,018	7,000
Vinton.....	22,984	6,451	5,915	10,618
Wilkesville.....	23,365	8,829	7,566	6,970
Total.....	259,305	74,652	92,218	92,435
Per cent.....	100	29	35	36

*Area in villages included.



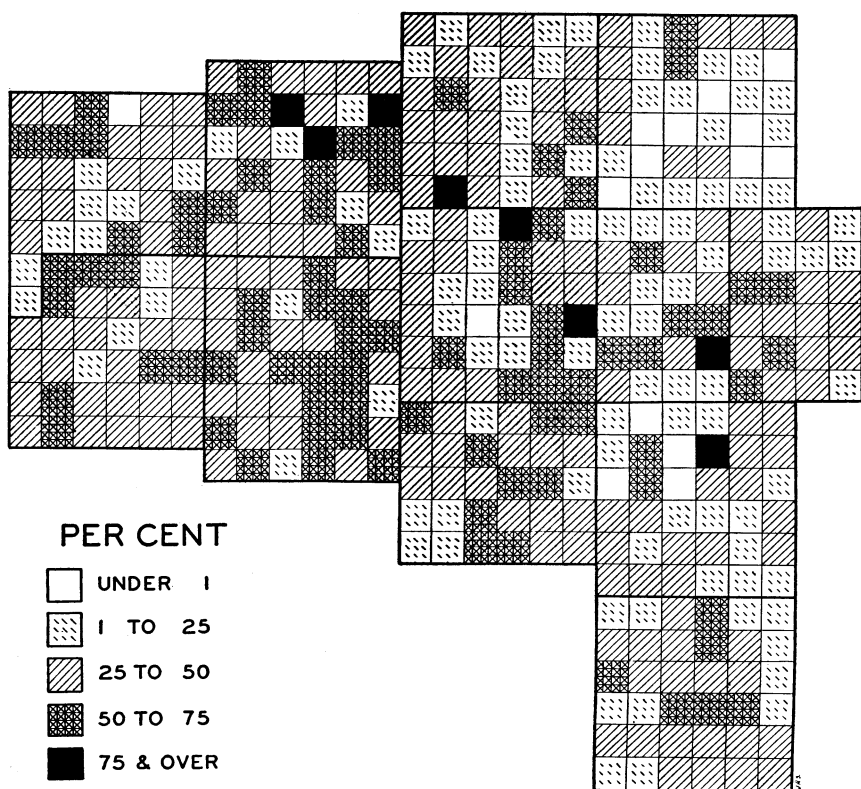
Map 6.—Open land (by sections)

Brush land made up 35 per cent of the total area in the county. The distribution of brush was fairly uniform over the county as can be observed from Map 7. The highest percentage of brush existed in the townships of Jackson and Richland, in which counties an average of 46 per cent of the area was in brush.

Thirty-six per cent of the total county area was designated as woods.² The heavy or more intensely wooded areas were found in the townships of Brown, Madison, and Vinton (in the eastern part of the county), and in Eagle (in the western part). Map 5 graphically shows the percentage of open land, brush land, and wood land

²Mention should be made that the tax laws of Ohio provide for the encouragement of systematic forestry. (Section 5554-1-8 General Code of Ohio). By meeting the specifications in forestry practice approved by the State Forester, wood lands may be taxed at one-half the local rate of taxation on the value of the bare land. In lieu of a yearly tax on the timber a yield tax of 5 per cent on the stumpage value is assessed on the timber when cut. Timber used for improvements on the land of the owner is exempt from the yield tax. At the time this study was made, 14 holders of forest land in the county had taken advantage of the forest tax law. The total area so classified in the county was 4,858 acres.

by townships. The distribution of the open land, by sections (approximately 640 acres each), is shown in Map 6, of brush land in Map 7, and of wood land in Map 8.

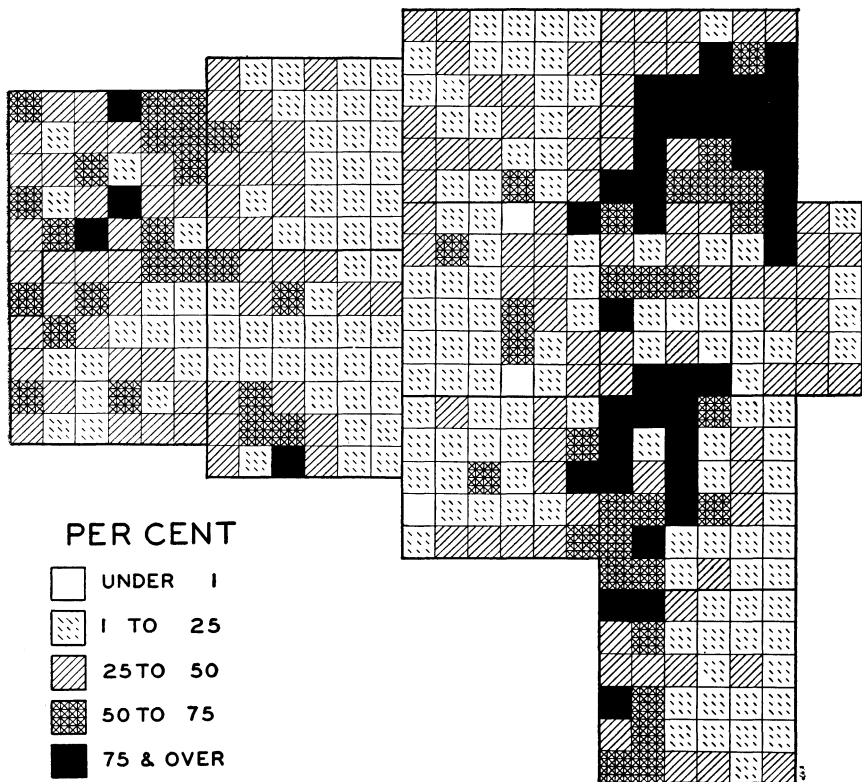


Map 7.—Brush land (by sections)

THE NUMBER AND SIZE OF HOLDINGS

There were 2,496 separate holdings or owners of land in the county in 1930 outside of villages, the holdings averaging 103 acres each. In contrast to this, it is of interest to note that the census of 1930 reported 1,031 farms. This would leave 1,365 holdings not classed as farms. Two-thirds of the holdings were less than 100 acres in size; this group of land-holders, however, owned only 27.7 per cent of the land in the county. The remaining one-third of the land-holders, with holdings of 100 acres or over in size, represents 72.3 per cent of the total area. There were 36 holdings of 500 acres or more in the county, and these included 18.3 per cent of the land.

Twenty-three of the 36 holdings ranged from 500 to 1,000 acres, five from 1,000 to 2,000 acres, five from 2,000 to 3,000 acres, and two from 3,000 to 4,000 acres; one holding was of over 7,000 acres (Table 5).



Map 8.—Wood land (by sections)

The holdings in Brown Township are, on the average, the largest in the county, followed by Madison, Elk, Swan, and Vinton Townships. An area made up of Brown and Madison, together with parts of Swan, Elk, Vinton, and Wilkesville Townships, extending north and south through the eastern half of the county, includes most of the large holdings. The four townships, Eagle, Harrison, Jackson, and Richland, in the western half of the county, along with Knox and the eastern half of Vinton and Wilkesville Townships in the eastern part of the county, are made up of small holdings.

A considerable portion of the area in these large holdings has never been used for agriculture. A number of the largest holdings were brought together and held for mineral rights and development. Some of these were acquired more recently for the timber growth. Several of the holdings of 500 to 1,000 acres in size have been and are used in part for agricultural purposes, but the greater number of the larger holdings have been and are held for other than agricultural purposes.

TABLE 5.—The Number and Size of Holdings in Vinton County, 1930*

Size of holding in acres	Number of holdings	Total acres included
Under 20.....	404	2,709
20 to 49.....	643	18,935
50 to 99.....	672	49,901
100 to 174.....	473	64,687
175 to 259.....	169	36,607
260 to 499.....	99	37,504
500 to 999.....	23	15,437
1000 and over.....	13	31,959
Total.....	2,496	257,739

*Does not include holdings in villages.

LAND NOT IN FARMS

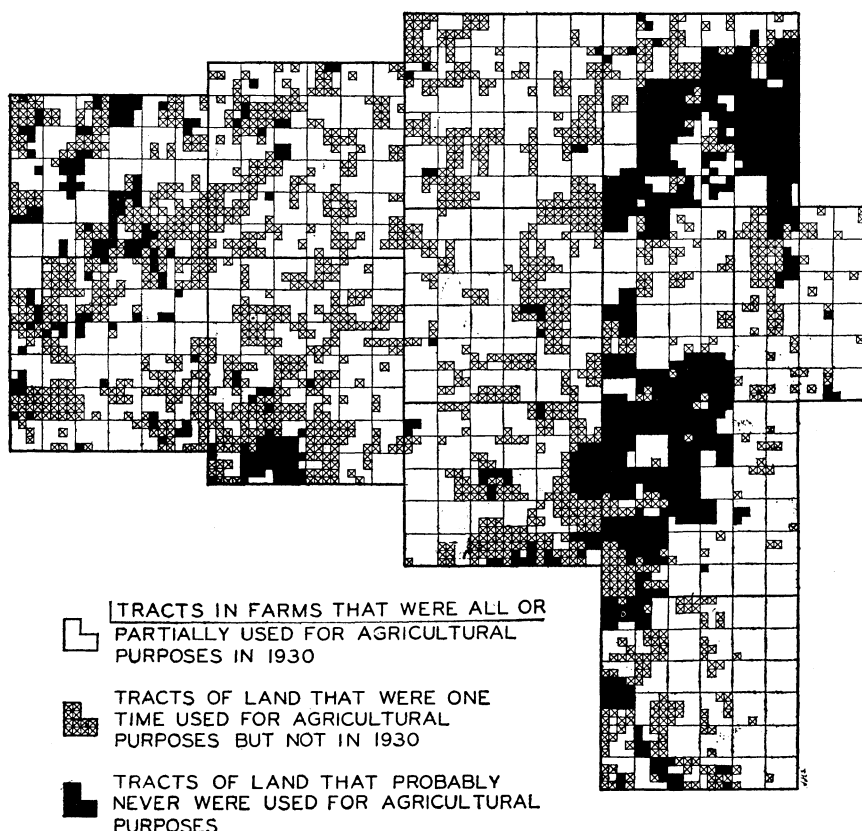
The land was divided into two main groups, land in farms³ and land not in farms. The acreage of land not in farms was found to be 106,803 acres, or 41.2 per cent of the total area in the county. A decided increase has taken place in the acreage of land not in farms since 1900, accompanied by a decrease of the land in farms. In five of the 12 townships over 45 per cent of the land was not in farms. Four of these are contiguous townships on the east side of the county; namely, Brown Township with 63 per cent of the area not included in farms, Madison with 46 per cent, Vinton with 47 per cent, and Clinton Township with 47 per cent. Eagle Township, in the extreme northwest, has 49 per cent of its land not in farms (Table 6).

An attempt was made to classify the tracts not in farms into two groups: those which had at one time been used for agricultural purposes and those which had probably never been so used. The former class comprised 66,762 acres, or 25.8⁴ per cent of the

³Land in farms was defined as: Tracts of land of more than 3 acres in size with more than 3 acres used for agricultural purposes.

⁴Land not in farms, that was one time used for agricultural purposes, was defined as: Tracts of land on which there were or had been farm buildings and which gave evidence of having been improved and farmed but had 3 acres or less used in 1930. Tracts of land with occupied houses but with 3 acres or less used were similarly classified.

total area of the county, and the latter 40,041 acres, or 15.4⁵ per cent. Brown, Madison, and Vinton Townships have the largest acreage of land never used for agricultural purposes, 40 per cent of their total acreage falling in this class. Swan, Elk, and Jackson Townships have only 3 per cent of this type of land. The greatest movement of land out of the farm class and into the class of once used tracts has taken place in Harrison, Jackson, Richland, and Clinton Townships. At the time of the survey, tracts comprising over one-third of the area of the townships just named had passed out of the bounds of farms.



Map 9.—The utilization of Vinton County land

The land which was probably never used for agricultural purposes was, at the time of the survey, 85.9 per cent wooded, 10.2 per cent in brush, and 3.9 per cent open, the open land representing the

⁵Land not in farms, that was probably never used for agricultural purposes, was defined as: Tracts of land with no farm buildings or evidence of buildings together with the lack of indication that the land had ever been improved or farmed in any way.

area in villages. The land not in farms but that had at one time been used for agriculture was 38.7 per cent wooded, 52.8 per cent in brush, and 8.5 per cent open land.

The condition and type of cover on the land that was probably never used for agricultural purposes depends on different factors. Tracts from which the timber had been recently removed were occasionally grown up with brush, while others were starting a second or third growth of timber. The condition depended largely upon the method of lumbering practiced, soil type, and topography. Sometimes areas were found where the soil was too badly depleted to support a timber growth with the result that a growth of brush occupied the land.

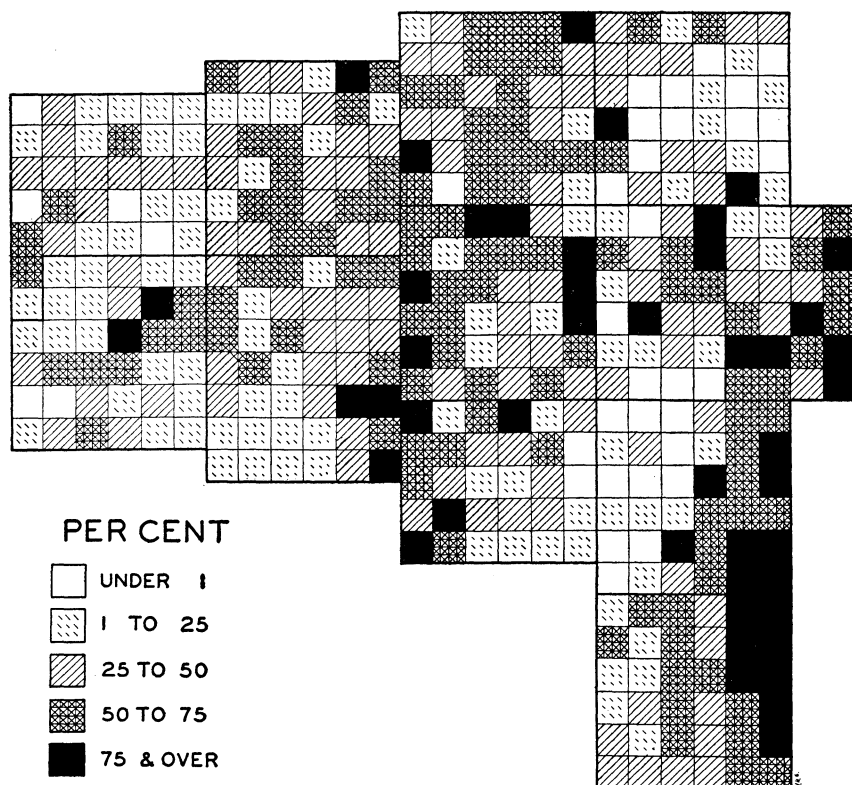
Land not now in farms that was at one time used for agriculture contained tracts of land with all degrees of reversion to forest land. Some tracts included in this group gave evidence of having been out of cultivation for 25 years or more. The buildings were often fallen or completely gone, the land that at one time had been cleared and farmed was grown up in brush and often a fair stand of trees with several years' growth occupied the land. Several tracts were found that gave evidence of having been deserted within the previous year. The buildings would often be in fair condition, which indicated occasional visits by the owner; probably a small garden plot was used by either the owner or a neighbor. Some of the land might still be open or free from brush but usually such acreage was small, most of the farm being occupied by brush or woods. All degrees of desertion existed between the two extremes described. Occasionally a tract of land was found with the house still inhabited but with little or no land farmed.

LAND IN FARMS

Of the total area in the county, 152,502 acres, or 58.8 per cent, were within the bounds of farms. The leading townships in this respect were Swan (68 per cent), Elk (67 per cent), Knox (72 per cent), and Wilkesville (70 per cent). Not all of the land in farms in 1930 was being used for agricultural purposes. In fact, only 69 per cent of the area in farms, or 40 per cent of the land in the county, was being utilized in any way. All land which was used for either crops or pasture was classed as used land. In only four of the 12 townships in the county (namely, Swan, Elk, Knox, and Wilkesville), was 50 per cent or more of the total area used for agriculture. Less than one-fourth of the total area of Brown Township was used. The utilization of the land for agriculture (crop land and land pastured) is given by townships in Table 7 and by sections in Map 10.

TABLE 6.—The Utilization of Land in Vinton County, 1930

Township	Total area	Land in farms			Land not in farms			Percentage		
		Total	Used	Not used	Total	One time used for agricultural purposes	Probably never used for agricultural purposes	Land used	Not used	Total
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>			
Eagle.....	20,877	10,713	5,138	5,575	10,164	6,492	3,672	24.6	75.4	100
Harrison	21,927	12,471	6,897	5,574	9,456	8,040	1,416	31.4	68.6	100
Jackson	23,269	14,528	9,972	4,556	8,741	8,142	599	42.8	57.2	100
Richland	26,886	15,981	9,907	6,074	10,905	8,876	2,029	36.8	63.2	100
Swan	23,418	15,986	11,910	4,076	7,432	7,162	270	50.9	49.1	100
Elk	23,271	15,724	12,675	3,049	7,547	6,370	1,177	54.5	45.5	100
Clinton	19,217	10,245	7,789	2,456	8,972	6,465	2,507	40.5	59.5	100
Brown	23,263	8,754	5,484	3,270	14,509	2,678	11,831	23.6	76.4	100
Knox	15,519	11,280	8,657	2,623	4,239	3,140	1,099	55.8	44.2	100
Madison	15,309	8,274	5,336	2,938	7,035	2,322	4,713	34.8	65.2	100
Vinton	22,984	12,166	9,255	2,911	10,818	2,452	8,366	40.3	59.7	100
Wilkesville	23,365	16,380	12,040	4,340	6,985	4,623	2,362	51.5	48.5	100
Total.....	259,305	152,502	105,060	47,442	106,803	66,762	40,041	40.5	59.5	100
Percentage of total area in county.	100.0	58.8	40.5	18.3	41.2	25.8	15.4	.....	.....	.....



Map 10.—Land used for crops and pasture, 1930 (by sections)

The area of improved land in farms in the county was 67,383 acres.⁶ This was 26 per cent of the total land area of the county, or 44 per cent of the land in farms. In 1900 the acreage in improved land in farms as reported by the Census was 145,559 acres, or 56 per cent of the land area of the county and 64 per cent of the land in farms. The total acreage of improved land has thus decreased over one-half since 1900. The remainder of the land in farms at the time of the study was in brush and woods, 35 per cent in brush and 21 per cent in woods.

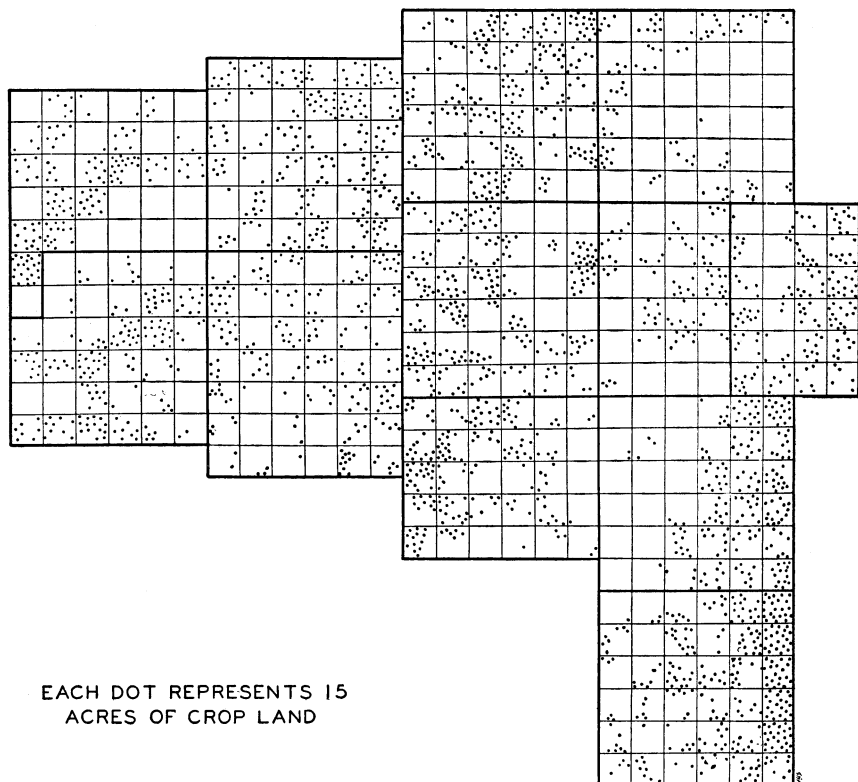
The survey showed a total of 35,374⁷ acres in crops. In 1900 the census reported 55,470⁸ acres in crops. Since 1900 the acreage

⁶Improved land as defined by the 1900 Census was land which had been cleared and plowed or mowed and was free from brush or trees at the time the census was taken. The same definition was used in the 1930 study.

⁷The survey figure for the area of crop land is not exactly comparable with the census figure since the survey included all of the land in hay and crop rotation whether it was actually in a crop to be harvested or not; whereas the census figure included only crops to be harvested.

⁸Area in orchard included. Acreage estimated on basis of number of apple and peach trees reported.

in crops has declined rather continuously with the exception of a brief period during the World War when prices were high and agriculture was generally stimulated. The eastern half of Wilkesville, Vinton, and Knox Townships has the highest percentage of cropped land. Swan, Elk, and Clinton Townships contain fairly large areas of land used for crops. Brown Township with 15 per cent of its land in crops and Wilkesville with 28 per cent in crops represent the two extremes. In general, the land used for crops in the county is confined to the relatively level land and the more gentle slopes found along some of the streams in the county. The cultivation of fields on the ridges is being rapidly abandoned. In preparing the map on crop land distribution, an effort was made to picture as nearly as possible the true location of the crop land (Map 11). A comparison with Map 2 showing the location of streams will give some idea of the relationship between the drainage system and the location of crop land.



Map 11.—Land in crops, 1930

TABLE 7.—The Utilization of Land in Farms in Vinton County, 1930

Township	Land in farms							
	Total	Used	Not used	In crops				Pasture
				Rota- tion	Other hay	Or- chard	Total	
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Eagle.....	10,713	5,138	5,575	2,272	184	34	2,490	2,648
Harrison.....	12,471	6,897	5,574	2,494	332	41	2,867	4,030
Jackson.....	14,528	9,972	4,556	2,239	1,159	24	3,422	6,550
Richland.....	15,981	9,907	6,074	2,505	508	75	3,088	6,819
Swan.....	15,986	11,910	4,076	2,846	763	105	3,714	8,196
Elk.....	15,724	12,675	3,049	3,081	460	88	3,629	9,046
Clinton.....	10,245	7,789	2,456	1,955	825	97	2,877	4,912
Brown.....	8,754	5,484	3,270	1,019	430	10	1,459	4,025
Knox.....	11,280	8,657	2,623	1,725	691	82	2,498	6,159
Madison.....	8,274	5,336	2,938	927	343	49	1,319	4,017
Vinton.....	12,166	9,255	2,911	2,759	251	170	3,180	6,075
Wilkesville.....	16,380	12,040	4,340	3,944	665	222	4,831	7,209
Total.....	152,502	105,060	47,442	27,766	6,611	997	35,374	69,686

There were 69,686 acres of land pastured in the county in 1930; this was 46 per cent of all land in farms, or 26 per cent of the land in the county. Forty per cent of the land pastured was open land, 44 per cent brush, and 16 per cent woods. The total acreage of land used for pasture, as well as for crops, has declined since 1900. The pasture, for the most part, is of a poor quality and not capable of heavy grazing. Surface erosion and cropping have depleted the soil fertility in many areas to a point where the plant growth will support only a small fraction of what it formerly did. The extent and type of pasturage by townships is given in Table 8.

TABLE 8.—Surface Cover of Vinton County Pasture, 1930

Township	Total land pastured	Open land pastured	Brush land pastured	Wood land pastured
	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Eagle.....	2,648	603	1,723	322
Harrison.....	4,030	1,712	2,092	226
Jackson.....	6,550	2,658	3,049	843
Richland.....	6,819	3,012	3,382	425
Swan.....	8,196	4,247	2,566	1,383
Elk.....	9,046	3,223	4,662	1,161
Clinton.....	4,912	2,379	2,029	504
Brown.....	4,025	965	1,617	1,443
Knox.....	6,159	1,914	2,826	1,419
Madison.....	4,017	1,398	1,776	843
Vinton.....	6,076	2,809	2,239	1,027
Wilkesville.....	7,209	2,937	2,984	1,288
Total.....	69,686	27,857	30,945	10,884

The land in farms included all degrees of utilization. Some tracts were fully utilized; others only partially so. Frequently, a farmer would rent and farm the open land on a neighboring tract. The tendency has been to make use, by cropping, of the better land

on the tracts that were no longer occupied. After a few years of such treatment, the soil usually became too thin to farm and the next step was complete idleness, which placed the land in the class of tracts once used but no longer in farms. Some of the farmers had bought and were still buying adjoining tracts of land, with the result that they have been able, in some cases, to get together sufficient acreage of the more productive land to make possible a volume of business sufficiently large to return a profit.

In earlier days, at the peak of agricultural development, the land was fairly well fenced and there still remained sufficient evidence to bear out that fact. On many of the farms at the time of the survey the fence problem was an important one. An occupied farm was frequently joined by one or two deserted tracts and it was not unusual to find a farm completely surrounded by idle or deserted land. The natural thing on the part of the owners of the deserted tracts was to permit the fences to go down as there was little or no incentive to keep them up. The fence situation in 1930 can best be described as approximately 50 per cent gone and 50 per cent fair to good, with very little good. The unused and unoccupied land with unkept fences made the burden doubly heavy on the operated land. For the owner desiring to farm his land, there was usually only one thing to do and that was to assume the burden of fencing his entire farm if he did not wish to have his crops disturbed and his livestock scattered over the adjoining land.

HOUSES

There were 2,500 occupied houses in the county at the time of the survey, 1,620 of which were distinctly rural and 880 of which were in incorporated and unincorporated villages (Table 9). Between 1920 and 1930, the number of occupied houses in the county decreased 13.3 per cent. There were also 446 inhabitable houses that were unoccupied, 392 of which were outside of villages and 54 in villages. In addition to the occupied houses and inhabitable unoccupied houses outside of villages in the county, there were 312 houses that had deteriorated to the place where they were no longer habitable. Evidence, such as cellar holes, foundations, lilac bushes, etc., indicated the former location of 278 other houses that had entirely disappeared by 1930. There were undoubtedly many other locations where there had been houses, as was some times indicated on the topographic maps, where no evidence remained to make known their previous existence. An effort was made to eliminate from the analysis cases where an old house had been dis-

TABLE 9.—Utilization and Condition of Houses in Vinton County, 1930

Township	Utilization of houses				Condition of houses				
	Occupied	Unoccu- pied	Gone	Total	Inhabitable		Uninhabitable		Total
					Fair to good	Poor or dilapidated	Still standing	Fallen or gone	
	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>	<i>Number</i>
Eagle	106	61	21	188	48	86	25	29	188
Harrison	152	64	59	275	68	107	25	75	275
Jackson	122	112	24	258	65	116	34	43	258
Richland	183	64	23	270	98	125	17	30	270
Swan	122	67	22	211	100	57	18	36	211
Elk	129	42	12	183	85	61	12	25	183
Clinton	146	27	20	193	93	65	8	27	193
Brown	77	33	21	131	44	53	10	24	131
Knox	100	65	22	187	63	74	20	30	187
Madison	85	21	20	126	45	54	4	23	126
Vinton	170	82	10	262	64	162	20	16	262
Wilkesville	228	66	24	318	103	176	10	29	318
Total outside of villages	1,620	704	278	2,602	876	1,136	203	387	2,602
Per cent of total	62.3	27.1	10.6	100	33.6	43.7	7.8	14.9	100
Village total	880	54	.....	934	.....	.....	.....	.....	.....
Per cent of total	94.2	5.8	.....	100	.....	.....	.....	.....	.....

carded for a new house on the farm. In the villages data as to the number of occupied and unoccupied houses were obtained, no effort being made to check the condition of the houses or the number of houses that may have existed in the past. The locations of the houses, schools, churches, and villages are given on Map 14.

Slightly over three-fourths of the houses located outside of the villages were in an inhabitable condition at the time of the survey. The houses classed as inhabitable ranged in condition from good to dilapidated as follows: 14 per cent good, 29 per cent fair, 34 per cent poor, and 23 per cent dilapidated. The conditions of the houses classed as uninhabitable varied from houses still standing to houses falling, fallen, or gone. Houses in the county were for the most part medium or small in size; 10 per cent were considered as large, 44 per cent medium, and 46 per cent small. In general, the other farm buildings were small and in poor condition. Over one-half of the barns were small and two-thirds or more were in a poor or dilapidated condition.

SCHOOL HOUSES AND CHURCH BUILDINGS

The decline in population has greatly affected the number of churches and schools in the county. At one time there were 70 or more churches, but at the time of the survey only 40 of these were holding services regularly or irregularly. A few more were opened occasionally for funerals. The church buildings were for the most part small and in average or poor condition; some had deteriorated to such an extent that they could no longer be used for public meetings, and others were completely gone. There were 106 school houses in use in the county in 1890; in 1930 there were 71. The schools that were operated in 1930 were all one-room buildings with the exception of twelve. Almost all of the one-room school buildings were small and in poor condition.

ROADS

There were 856 miles of road in Vinton County in 1929, according to a report of the State Highway Department. In the 1910 report of the same department no roads better than dirt were in existence in the county. There were 18 miles of gravel and surface-bound roads in 1918. By 1926 the improved road mileage had increased to 104. During the next 4-year period, road improvement developed at a more rapid rate. In 1929 there were 148 miles of gravel or surfaced road in the county. In 1930 the Highway

Department reported a total of 202 miles of improved roads (gravel or better) in the county, which was 23.5 per cent of the total mileage. Eighty-seven miles were state roads and 115 miles were on the county and township systems. The dirt road mileage remaining in the county in 1930 was 654, all of which was on the county or township road system. The 1929 State Highway data (most recent at the time of writing) on roads reported 57 per cent of the total road mileage in the State as gravel or better, in comparison with 19 per cent for Vinton County.

Approximately 15 per cent of the total road mileage in the county has been abandoned or is in the process of being closed by the activities of nature. Very few, if any, of the roads have been officially closed. Some of the roads were closed with gates or fences, others were unobstructed by artificial means but, due to the action of the weather and plant growth, were either impassable or only passable on horse back or in a wagon.

While the mileage of improved road is now only 23.5 per cent of the total, approximately 45 per cent of the inhabited houses outside of villages were located on these improved roads in 1930. On the improved road system there are now 3.6 occupied houses per mile; whereas on the unimproved roads there are 1.4 occupied houses per mile. As compared with conditions 20 years ago when there were no improved roads in the county, the roads of 1930 are a great step forward; yet there still remains a great task if all, or even most, of the people are to have satisfactory road outlets.

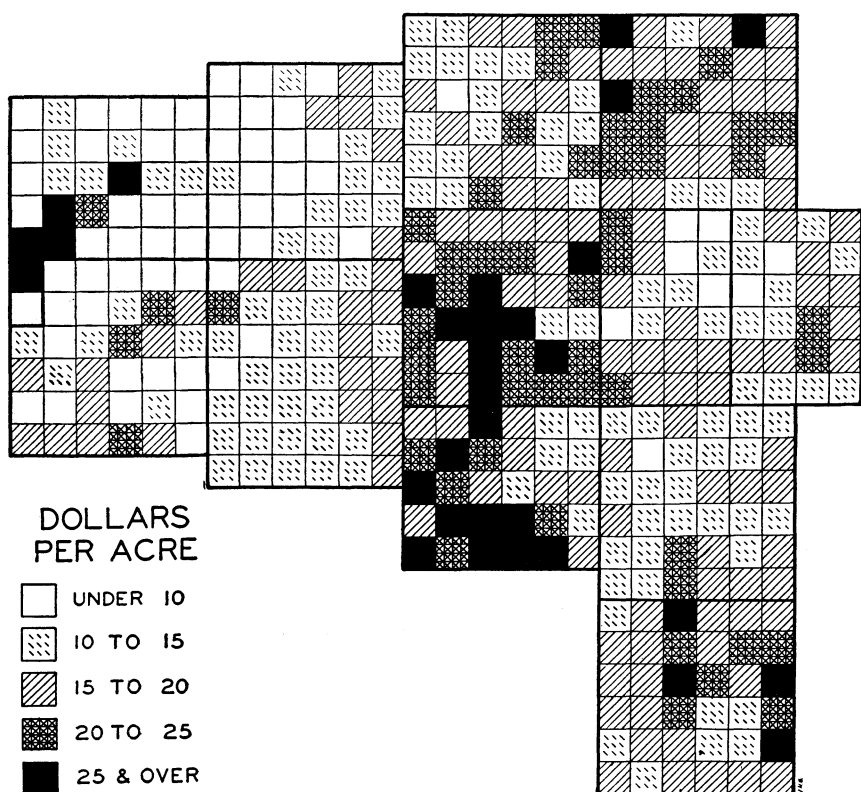
LAND VALUES IN VINTON COUNTY

Land values in Vinton County are relatively low as compared with the values existing in the better agricultural areas of the State. Average census values per acre of farm real estate in Vinton County were \$15.75 in 1910, \$23.88 in 1920, and \$20.79 in 1930, as compared with values of farm real estate in the State at large of \$68.46 in 1910, \$113.18 in 1920, and \$78.91 in 1930. The foregoing values apply to the area in farms only and it is opportune to point out here that only 58.8 per cent of the area of Vinton County was included in farms in 1930.

Land values recorded in deeds in Vinton County give some idea of the average price of land in the area. Deeds showing the true consideration are given as a rule only in settlement of the estates of deceased persons and in sales by the sheriff; nevertheless the average values, as shown in Table 10, do not seem to be unrepresentative when compared with the ideas of land value held by local

residents or when compared with the few actual sales which were a matter of observation. The value shown in deeds averages slightly under \$15.00 per acre for the period 1923 to 1929, inclusive.

The demands for revenue to support local government have encouraged a relatively high valuation of land in Vinton County, at least in terms of the present sale price. A comparison of townships as units indicates that those townships with a relatively low proportion of the land yielding current income are assessed for taxation on a value about as high as those townships having a relatively large proportion of the land under cultivation. A factor of importance in this respect is that the timber growth may be more extensive and nearer a merchantable size in some of the areas where few farms are located (Table 11).



Map 12.—Assessed valuation (by sections)

TABLE 10.—Price of Rural Real Estate in Vinton County Transferred for Other than One Dollar Consideration, 1910 to 1930*

Year†	Average price per acre	Year†	Average price per acre
	<i>Dollars</i>		<i>Dollars</i>
1910.....	13	1920.....	22
1911.....	10	1921.....	24
1912.....	10	1922.....	22
1913.....	11	1923.....	18
1914.....	12	1924.....	13
1915.....	9	1925.....	18
1916.....	11	1926.....	17
1917.....	11	1927.....	14
1918.....	20	1928.....	10
1919.....	20	1929.....	13
		1930.....	

*Derived from the Annual Reports of the Secretary of State.

†Year ending June 30th.

TABLE 11.—Tax Valuation of Rural Land in Vinton County, 1928

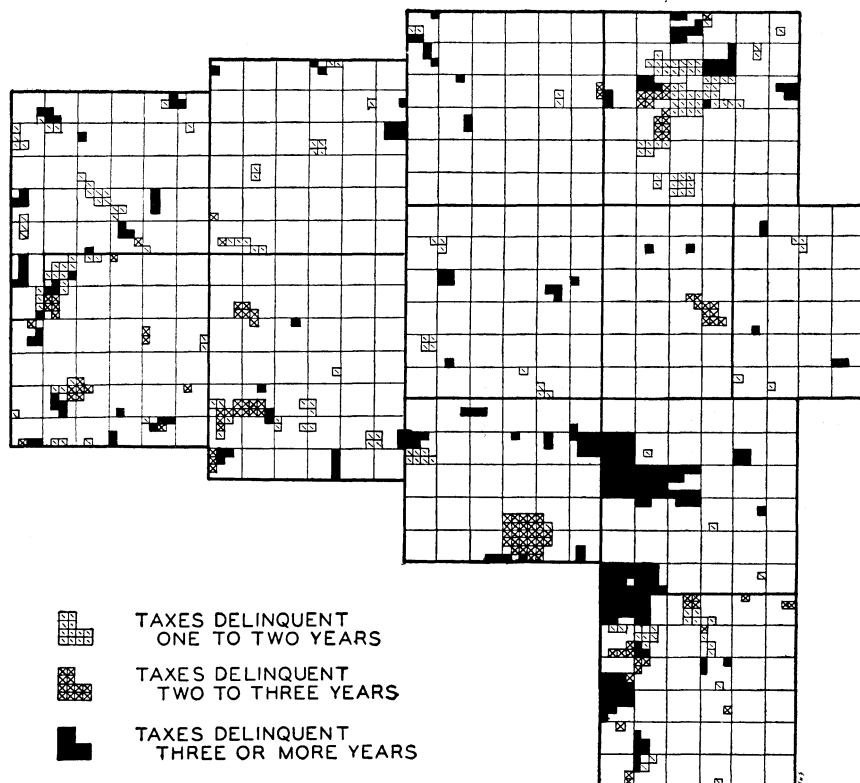
Townships	Total acres*	Total value, land and buildings	Value of land	Value of buildings	Value per acre		
					Total land and buildings	Land	Buildings
		<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>
Eagle.....	20,884	254,110	210,210	43,900	12.19	10.08	2.11
Harrison.....	21,889	272,100	238,140	33,960	12.43	10.88	1.55
Jackson.....	23,267	243,210	205,410	37,800	10.45	8.83	1.62
Richland.....	26,834	360,630	321,110	39,520	13.43	11.96	1.47
Swan.....	23,305	372,300	318,270	54,030	15.97	13.65	2.32
Elk.....	21,964	467,870	399,730	68,140	21.30	18.20	3.10
Clinton.....	19,040	402,520	339,290	63,230	21.14	17.82	3.32
Brown.....	23,190	454,230	423,260	30,970	19.58	18.25	1.33
Knox.....	15,326	226,980	194,890	32,090	14.81	12.71	2.10
Madison.....	14,907	219,810	197,380	22,430	14.74	13.24	1.50
Vinton.....	22,960	335,800	289,600	46,200	14.62	12.61	2.01
Wilkesville.....	23,244	428,370	336,160	92,210	18.42	14.46	3.96
Total.....	256,770	4,037,930	3,473,450	564,480	15.73	13.53	2.20

*Acres in incorporated and unincorporated villages and miscellaneous unclassified tracts are not included.

TAX DELINQUENCY

Tax delinquency on real estate is beginning to assume serious proportions in the county. The amount of delinquent real estate taxes was not particularly high prior to 1926, but the rate of increase since then obviously suggests that the burden of government is not being carried satisfactorily by many tracts. Of the total area of rural land in the county, 17.92 per cent was tax delinquent in 1930 (Table 12). Table 13 and Map 13 were constructed to show the areas of land where tax delinquency prevails. The townships of Brown, Vinton, Wilkesville, and Clinton each contain contiguous areas of from 640 acres to 2,500 acres which were tax delinquent in 1930. The other townships all contain some tax

delinquent land but in more scattered tracts. A comparison of Map 13 showing tax delinquency with Map 9 showing land utilization shows that, with few exceptions, the land now tax delinquent is not being used for agricultural purposes and quite often never has been cultivated.



Map 13.—Tax delinquent land, 1930

Of the 46,026 acres comprising the delinquent area at the end of 1930, some 12,305 acres had been delinquent 3 or more years and, therefore, if the taxes were not paid in one more year or less (if the law be followed strictly), will be sold for taxes or forfeited to the State. So far as was discerned, delinquent mineral lands are not a particularly important factor, since they comprise only 2,844 acres out of a total of 46,026 acres tax delinquent.

TABLE 12.—Delinquent Real Estate Taxes in Vinton County in Various Years*

Year	Total delinquency	Net increase or decrease
	<i>Dollars</i>	<i>Dollars</i>
1914.....	6,688	.....
1917.....	10,232	+ 3,544
1920.....	6,155	- 4,077
1923.....	6,738	+ 583
1926.....	8,173	+ 1,435
1927.....	12,635	+ 4,462
1928.....	21,285	+ 8,650
1929.....	28,548	+ 7,263
1930.....	37,432†	+ 8,884

*This is the total accumulated delinquency and not the delinquency originating in any particular year mentioned.

†Delinquency on rural real estate alone in 1930 was \$32,669.

TABLE 13.—Tax Delinquent Land in Vinton County, 1930

Townships	Total acres delinquent	Total dollars delinquent	Less than 1 year delinquent	1 to 2 years delinquent	2 to 3 years delinquent	3 or more years delinquent	Mineral land delinquent
			<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>	<i>Acres</i>
Eagle.....	3673	1932.70	1467	1130	58	978	40
Harrison.....	3868	2110.83	1321	800	747	767	233
Jackson.....	3256	871.07	2041	607	101	427	80
Richland.....	4791	2105.02	2654	597	904	527	109
Swan.....	1413	1271.61	774	159	142	338	.....
Elk.....	2338	1798.70	955	351	159	600	273
Clinton.....	4920	4135.19	2229	357	1032	1142	160
Brown.....	5392	4070.16	602	2831	547	1313	100
Knox.....	2623	607.06	1979	293	.....	191	160
Madison.....	1000	474.26	436	1	469	93	.....
Vinton.....	6134	7131.17	1779	320	4	3812	219
Wilkesville.....	6618	6161.37	1280	741	1010	2117	1470
Total.....	46,026	32,669.14	17,517	8,187	5173	12,305	2,844

PUBLIC REVENUES AND THE COST OF GOVERNMENT

The following discussion is intended to give a picture of the tax base and the public revenue income which supports the functions of government in Vinton County. As previously shown in this publication, much land in the county yields little or no agricultural income. Present or prospective income from timber or minerals, however, has given a value to much of the land not farmed and has insured the payment of taxes in most instances. Resources within the county are insufficient to meet all the costs of local government. Under these circumstances it might be anticipated that local taxation would be relatively high in terms of agricultural wealth or income. A study of individual farms has shown this to be the case.

A comparison of taxes with the farm business on a group of 85 Vinton County farms is made in Table 14. Similar data on 933 farms distributed over the State are shown in the same table. These data indicate that the relative tax burden, either in terms of

capital investment or in terms of income, is greater on the Vinton County group. This is true despite the fact that the property tax per acre on the Vinton County farms is only approximately one-fourth as great as the average on all Ohio farms.

Taxable wealth in the county contains an unusually large proportion of public utility property. Vinton has the distinction of being the only rural county in Ohio in which the railroads and other public utilities represent a larger part of the tax base than the rural real estate. While public utilities represent approximately 12 per cent of the total tax valuation of all property in Ohio, they represent 44 per cent of the valuation in Vinton County. In addition to public utilities, coal mining properties, equipment connected with oil and gas wells and pumping stations, two brick plants, and a few other small industrial concerns add to the tax base of the county, but they do not yield sufficient public revenue to support completely the functions of local government (Table 15).

Approximately \$322,887 were collected in Vinton County in 1929 for the support of the various units of government (Table 16). Of this amount, \$44,242, or 13.7 per cent, were paid into state funds and represent the contribution of the county toward state government. This does not represent the total cost of government in the county as is shown later, but it represents those payments, made directly or indirectly by the residents of the county (so far as could be calculated), which were used to support the various functions of state and local government.

Mainly through aid to weak school districts and through gasoline tax funds for road purposes, the State returned \$161,301 to the county to be administered by the local units of government (Table 17). Thus, \$117,059 more were paid to the county by the State than were paid from the county into state funds. In addition to the above, the State Highway Department spent \$138,766 on state roads in the county.

The expenditures by local units of government of public funds in the county in 1929 have been classified to show the various general functions performed; these expenditures amounted to \$422,205 (Table 18). Of this total expenditure, three services absorbed more than 90 per cent: education accounted for nearly one-half, 49.5 per cent; highways for nearly one-third, 31 per cent; and general government for 10.6 per cent. This amount does not include the \$138,766 spent by the State on state and federal highways, nor the \$51,806 spent for capital outlay on schools by local school

districts. The classifications used are partly self explanatory but may be made clearer by the following definitions of the items included:

1. General government—This includes the general executive and court costs, the salaries and supplies of the various county, township, and municipal offices, costs of elections, and the various expenses which were too general in nature to be charged to any specific function.

2. Protection to person and property—This includes costs of sheriff, police, dog warden, and township bounties.

3. Conservation and development of natural resources—Forest fire and game protection were the items included in this classification.

4. Health and sanitation—These include workmen's compensation for public employees, hydrophobia treatment, and care of cemeteries by townships.

5. Highways and streets—These include all thoroughfares of travel. The expenses listed under this head include maintenance, repair, and also outlays for new construction, for it was impossible to make a satisfactory division between the different items of road expense.

6. Charities and corrections—These include the cost of the county home, childrens' home, outdoor poor relief, blind relief, and costs of the county jail.

7. Education—The cost of local schools, the county agricultural agent, farmers' institutes, and the county fair are included under this heading, although some of the expenditures might properly be called conservation and development of natural resources.

8. Miscellaneous—Some expense can not be distributed because the necessary accounting information is lacking. Some debt payments and unclassified municipal expenditures were included herein.

**TABLE 14.—Taxes Compared with the Farm Business
on Two Groups of Farms**

	933 farms in various Ohio counties*			85 Vinton County farms		
	Per farm	Per acre	Percentage relationship of taxes	Per farm	Per acre	Percentage relationship of taxes
	<i>Dollars</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Per cent</i>
Property taxes.....	239	1.81	.....	59	0.49	.....
Capital investment.....	16,663	126.00	1.43	3,478	28.79	1.69
Gross cash income.....	3,666	27.77	6.50	864	7.15	6.83
Farm income†.....	2,080	15.76	11.81	433	3.58	13.65
Labor income†.....	1,413	10.70	16.91	258	2.14	22.86

*The 933 farms produced a larger income than the average of all Ohio farms, but the same is true of the 85 as compared with all Vinton County farms, for these were located in one of the best farm areas in the county.

†Before taxes were paid.

**TABLE 15.—Tax Valuation of the Various Classes of Property
in Vinton County, 1928**

	Real estate		Personal property		Public utility property		Total	
	<i>Dollars</i>	<i>Pct.</i>	<i>Dollars</i>	<i>Pct.</i>	<i>Dollars</i>	<i>Pct.</i>	<i>Dollars</i>	<i>Pct.</i>
Rural territory.....	4,378,440	41.0	924,380	8.6	5,830,360	50.4	10,682,180	100.0
Incorporated villages.....	1,262,050	59.3	596,250	28.0	271,240	12.7	2,129,540	100.0
Total.....	5,640,490	44.0	1,520,630	11.9	5,651,600	44.1	12,812,720	100.0

TABLE 16.—Public Revenue Collected in Vinton County for the Support of State and Local Government, 1929

Source of revenue	Collected for—											
	Total		State		County		Townships		School districts		Municipalities	
	<i>Dollars</i>	<i>Pct.</i>	<i>Dollars</i>	<i>Pct.</i>	<i>Dollars</i>	<i>Pct.</i>	<i>Dollars</i>	<i>Pct.</i>	<i>Dollars</i>	<i>Pct.</i>	<i>Dollars</i>	<i>Pct.</i>
Uniform property tax.....	250,146	77.5	3,237	7.3	79,373	77.8	31,334	94.1	126,699	96.6	9,503	77.9
Gasoline tax*	33,735	10.4	33,735*	76.3								
Motor vehicle license tax.....	11,661	3.6	5,830	13.2	3,830	3.7					2,001	16.4
Inheritance tax.....	260	.1	52	.1			13				195	1.6
Cigarette license tax.....	963	.3	723	1.6		.1	27	.1			93	.8
Legal and administrative fees and licenses.....	5,471	1.7	183	.4	5,117	5.0	45	.1	33		93	.8
Fines and court costs.....	1,488	.5	482	1.1	787	.8	154	.5			65	.5
Dog and kennel tax.....	2,115	.6			2,115	2.1						
Commercial receipts.....	7,988	2.5			1,606	1.6	1,728	5.2	4,409	3.4	245	2.0
Miscellaneous.....	9,060	2.8			9,060	8.9						
Total.....	322,887	100.0	44,242	100.0	102,008	100.0	33,301	100.0	131,141	100.0	12,195	100.0

*Estimated from the ratio of motor vehicle license fees paid in the county to the total paid in the State.

TABLE 17.—Income to Vinton County from the State, 1929*

	Total		County		Township		Municipality		School district	
	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>
Gas tax fund.....	66,740	41.4	54,000	93.7	9,600	100.0	3,140	100.0	13,829	15.2
Payment to weak school districts †.....	13,829	8.6							75,632	83.2
Payment to weak school districts ‡.....	75,632	46.9							1,483	1.6
Irreducible debt.....	1,483	.9								
State's share of County School Supt.....	1,417	.8	1,417	2.5						
State's share of county agr. ext. work.....	2,200	1.4	2,200	3.8						
Total.....	161,301	100.0	57,617	100.0	9,600	100.0	3,140	100.0	90,944	100.0

*Expenditures of the State Highway Department in Vinton County in 1929 are not included in this table. This amounted to a total of \$138,766, of which \$54,155 were the State's share for new construction and \$84,611 for maintenance and repair of State and Federal Highways in the County.

†By authority of Bill No. 117 of the 88th General Assembly.

‡House Bill No. 510.

TABLE 18.—Expenditure of Public Funds by Local Units of Government in Vinton County, 1929

	Total		County		Township		Municipality		School	
	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>	<i>Dollars</i>	<i>Per cent</i>
General government.....	46,731	10.6	34,367	19.6	10,338	24.1	2,026	11.9		
Protection to person and property.....	8,126	1.8	2,974	1.7	24		5,128	30.2		
Health and sanitation.....	3,876	.9	1,508	.9	2,307	5.4	61	.4		
Highways*.....	137,023	31.0	103,845	59.0	28,013	65.2	5,165	30.4		
Charities and corrections.....	17,040	3.8	15,743	9.0	1,297	3.0				
Education †.....	218,884	49.5	11,688	6.7	460	1.1			206,736	100.0
Development and conservation of natural resources.....	507	.1			507	1.2				
Payment of debt.....	8,012	1.8	5,418	3.1			2,594	15.3		
Miscellaneous.....	2,006	.5					2,006	11.8		
Total.....	442,205	100.0	175,543	100.0	42,946	100.0	16,980	100.0	206,736	100.0

*This does not include the \$138,766 spent by the State upon State and Federal Highways, nor the Federal government expenditure for the Post Office and Mail Service.

†This does not include capital outlay for schools, which amounted to \$51,806 of which \$47,380 were spent in Hamden School district.

SCHOOL EXPENDITURE

The educational system of Vinton County, in 1929, was made up of 17 local districts. In each of these districts educational facilities were supplied up to and including the eighth grade. In eight of the districts, high school facilities were supplied. The one-room school house predominates in the county; 66 of the 78 individual plants operated in 1929 were one-room schools, 4 were two-room schools, and 8 were three or more room schools. The number of pupils per one-room school ranged from 7 at Simms school in Brown township to 37 at Hawk School in Elk Township; the average for the one-room schools in the county was 19 pupils.

In 1855, according to the Ohio School Report, there were 3636 pupils enrolled in school in the county. The average length of school term that year was $4\frac{1}{2}$ months. By 1890 the school enrollment had increased to 4546. From that time on the enrollment has dropped continually and in 1929 the enrollment was reported as 2791. The size of the school plant in 1855 could not be definitely determined. In 1890 there were 106 school houses in operation. How regular has been the decline in number of school buildings used since 1890 is not known but by 1929 the number of buildings used had declined to 78 and since that time there have been 7 more discontinued. The income from local taxes and state aid for school purposes have increased fairly constantly since 1855. In 1855 the total receipts from all sources for schools were \$18,678. In 1890 the total income was \$41,674, and in 1929, \$219,884.

In 1855 Vinton County received \$6,921 from the State for educational purposes. The amount of state aid for education going into the county since 1855 has varied considerably, but the trend has been upward. In 1929 the county received \$94,561 from the State for educational purposes.

The decline in the county's population accompanied by a decline in school enrollment creates a definite problem in the cost of education. The number of pupils per school house has been greatly reduced without an accompanying reduction in cost. The fact that the reduction in population has been general has made it necessary to maintain small local education units or expend large sums for transporting the pupils to central points. The road situation has been and still is a decidedly limiting factor in centralized education in the county.

The cost per pupil at the Simms School, in Brown Township, with the smallest enrollment in the county in 1929 was \$170; whereas the cost per pupil at the Hawk School in Elk Township

with the largest enrollment was \$35. For the entire county the average cost per pupil was \$73. This is considerably less than the State average of \$105. In making this comparison no consideration is given to the quality of instruction.

TABLE 19.—Vinton County School Data

District	Number of pupils			Cost per pupil		
	Grades 1-8	High or grades 9-12	Total	Grades 1-8	High or grades 9-12	Total cost average all grades
Brown	62	.....	62	\$125.	\$	\$125.
Clinton	64	.....	64	80.	.....	80.
Eagle	119	11	130	72.	161.	79.
Elk	168	.....	168	47.	.....	47.
Harrison	136	.....	136	105.	.....	105.
Jackson	95	.....	95	100.	.....	100.
Knox	77	.....	77	84.	.....	84.
Madison	59	.....	59	103.	.....	103.
Richland	161	50	211	63.	114.	75.
Swan	74	18	92	87.	208.	110.
Vinton	218	47	265	50.	128.	64.
Wilkesville	293	62	355	59.	124.	70.
New Plymouth	28	.....	28	105.	.....	105.
Dundas	74	.....	74	84.	.....	84.
Hamden	229	68	297	59.	153.	81.
McArthur	205	354	559	48.	40.	43.
Zaleski	84	35	119	52.	176.	88.
County	2,146	645	2,791	.....	.....	73.

SUMMARY

1. The population of the county has decreased from 17,223 in 1880 to 10,285 in 1930.

2. The area of land in farms has decreased from 230,410 acres in 1880 to 152,502 in 1930.

3. At the present time only 58.8 per cent of the land is in farms, and only 40.5 per cent of the area is used for crops or pasture. Fourteen per cent of the area is used for crops.

4. Tracts comprising 15.4 per cent of the total area have probably never been used for agricultural purposes; while tracts comprising 25.8 per cent of the total area have been used in the past but are now abandoned.

5. By 1930 approximately 23.5 per cent of the road mileage was improved while 15 per cent has been abandoned.

6. The average tax valuation of rural real estate in 1928 was \$15.73 per acre.

7. Tax delinquency is increasing; 18 per cent of the land area was delinquent in 1930.

8. Public revenue to the amount of \$322,887 was collected in the county in 1929 for the support of State and local government. The expenditure of local units of government amounted to \$442,205. State aid made up the difference between receipts and expenses.

9. School costs per pupil varied from \$170 in the Simms School in Brown Township with 7 pupils enrolled to \$35 in the Hawk School in Elk Township with 37 pupils.

10. A declining and widely scattered population, together with a low tax base, is making it difficult to support public institutions and services at the standards generally approved in Ohio.

CONCLUSIONS

The trends taking place in the county should be taken into account by the officials when administering the affairs of local government. Large areas of land appear to be unable to support a system of agriculture that will yield its people a living and support the functions of local government, as indicated by the abandonment of the land and mounting tax delinquency. In view of the apparently inevitable and perhaps advisable decline in population, any distribution of public funds for roads and schools in such areas should be interpreted as temporary aid and be planned accordingly. The present and future use of these idle and abandoned areas may well be considered in any state conservation and forestry program.